Idaho Transportation Department
Solicitation #2011-04

Title

Defining and Quantifying Rural Congestion (limited to Idaho public universities)

Problem Statement

Rural congestion affects highway safety and mobility. Several studies have shown that the proportion of fatal and injury crashes increased and the proportion of multiple-vehicle crashes increased as congestion on two-lane highways increased. On many rural highways freight traffic contributes to rural congestion. Demand for freight transportation in the United States is expected to grow substantially over the next 15 years. The most striking growth is expected to be on rural highways. Seasonal congestion also affects routes to tourist and holiday destinations. It is important to understand where and how often rural congestion occurs.

Objectives

In an effort to quantify rural congestion, this research will:

1. Provide a definition of rural congestion. This definition will include thresholds for and methods of measuring congestion on various rural roads, including any subcategories (such as terrain type, functional class, or percent commercial vehicles) deemed appropriate.
2. Develop a data collection plan for evaluating rural congestion. This plan will include data to be collected and methods of data collection.

Research Proposed/Tasks

To develop an acceptable definition for rural congestion and a data collection methodology for measuring rural congestion, it is envisioned that the following tasks will be performed:

1. Conduct a literature search for best practices in other jurisdictions.
2. Interview state DOT representatives from Idaho and other states to determine methods in use for identifying and mitigating rural congestion.
    - Customer feedback.
    - District observations.
    - Crash histories.
    - Passing and pullout Opportunities.
    - Terrain.
    - Road geometry.
3. Use literature search and interviews to help develop a proposed definition for rural congestion. The definition will include the method of measuring congestion on any given rural road. It will also include all thresholds for rural roads including any

subcategories (such as terrain type, functional class, or percent commercial vehicles) that may be required for each threshold.

4. Document the findings of the literature search and interviews in a working paper with the proposed definition of rural congestion.
5. Create a PowerPoint presentation of the results of the literature search and interviews with the proposed definition of rural congestion.
6. Develop a data collection plan for data necessary to evaluate rural congestion under the proposed definition, including, but not limited to:
    - A list of data items necessary for measuring rural congestion.
    - A list of items already collected and stored by ITD.
    - A list of data items not already collected and stored by ITD.
    - Data collection methods and/or sources for data items not already collected and stored by ITD.

Deliverables

Deliverables for this research project will include:

1. Comprehensive literature report within the first month, with periodic updates included with each quarterly report.
2. Working paper of rural congestion definition within 5 months based in part on interviews with state DOT representatives.
3. PowerPoint presentation of rural congestion definition within 5 months.
4. Draft data collection plan within 6 months.
5. Final data collection plan.
6. Final report of work efforts, findings, proposed definitions, and data requirements.

ITD Project Involvement

ITD will make available any data currently stored and maintained related to rural congestion including, but not limited to:

1. The HPMS data set for the Idaho State Highway System at 100% sampled, including in part
    - Number of Lanes.
    - Lane widths.
    - Shoulder types.
    - Shoulder widths.
    - Functional Classification.
    - AADT's.
    - Terrain type.
    - Percent commercial vehicles.
2. Passing Lanes.
3. Commercial AADT's.

Estimated Project Duration

6-8 months beginning in January 2011.

Project Budget Range

$25,000 - $35,000

Proposal Format

All proposals must be formatted in accordance with the requirements specified in ***ITD's Request for Qualifications and Interest***, which is available at:

http://itd.idaho.gov/planning/research/proposals

Proposal Deadline

Proposals must be received by the close of business **November 17, 2010**. Submit proposals by mail, e-mail, or facsimile to:

Idaho Transportation Department
Research Program, Planning Division
3311 W. State St.
P.O. Box 7129
Boise, ID 83707-1129
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(208) 334-4432 (fax)